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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,895	12/08/2003	Gregory Maury Shepherd	017198-0119	9682

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FOLEY AND LARDNER  
SUITE 500  
3000 K STREET NW  
WASHINGTON, DC 20007

EXAMINER
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HOPKINS, ROBERT A

ART UNIT	PAPER NUMBER
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1724

DATE MAILED: 05/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/728,895

Applicant(s)

SHEPHERD, GREGORY MAURY

Examiner

Robert A. Hopkins

Art Unit

1724

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14-18, 21 and 23-30 is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 8, 12, 13 and 31-34 is/are rejected.
- 7) ☒ Claim(s) 6, 9-11, 19, 20 and 22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12-8-03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

Claims 12,13,19,20,22,33 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claims 12,13,18,19,22 fail to further limit the structural limitations of claim 1. Claims 12,18, and 19 are directed to a statement of the separation efficiency, and claims 13,22, and 33 are directed to a statement of the process of making the modules, however none of the claims further limits structural limitations.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Regehr et al(4072478).

Regehr et al(4072478) teaches a drift eliminator comprising a plurality of air channel modules, each module comprising a plurality of air channels, and at least one planar sheet(6) positioned between two of the air channel modules, wherein the air channel modules are formed by a series of undulating sheets(2). Regehr et al(4240814)

further teaches wherein the air passing through the air channels travels in a non-linear path. Regehr et al(4240814) further teaches wherein the non-linear path has at least one portion which defines an upward direction.

Examiner notes that claim 1 is directed only to the first plurality of air channel modules, and limitations to the second plurality of air channel modules are not given patentable weight. Examiner notes claim 5 recites "further comprising: a second plurality of air channel modules", therefore only the dependant claim gives patentable weight to a second plurality of air channel modules.

Claims 31-34 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Regehr et al(4240814).

Regehr et al(4240814) teaches a light trap comprising at least two air channel modules comprising a plurality of sheets comprising at least a first sheet, a second sheet, and a third sheet, wherein each of the sheets comprises a series of troughs and peaks, wherein the sheets are arranged such that the troughs of the first sheet abut the troughs of the second sheet and the peaks of the second sheet abut the peaks of the third sheet, to create a plurality of air channels.

Examiner notes that although the structure of Regehr et al(4240814) is not taught as being used as a "light trap", the limitations of the claim are clearly met by the structure of Regehr et al(4240814), therefore the claim is anticipated. Also, claim 31 recites "may be nested", therefore claim 31 reads on two separate air channel modules having structure which promotes nesting, but wherein nesting is not required. Clearly

the structure of Regehr et al can be replicated to produce two identical air channel modules.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5,7,8,12,13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Regehr et al(4240814) taken together with Regehr et al(4072478).

Regehr et al(4240814) teaches a drift eliminator comprising an air channel module comprising a plurality of air channels, wherein the air channel module is formed by a series of undulating sheets. Regehr et al(4240814) is silent as to a plurality of air channel modules, and at least one planar sheet positioned between two of the air channel modules. Regehr et al(4072478) teaches a plurality of air channel modules, each module comprising a plurality of air channels, and at least one planar sheet(6) positioned between two of the air channel modules, wherein the air channel modules are formed by a series of undulating sheets. It would have been obvious to someone of ordinary skill in the art at the time of the invention to provide a planar sheet between two of the air channel modules of Regehr et al(4240814) to form a plurality of tortuous channels through which the gas flows(column 3 lines 52-56 of Regehr et al(4072478)).

Regehr et al(4240814) further teaches wherein the air passing through the air channels travels in a non-linear path. Regehr et al(4240814) further teaches wherein the non-linear path has at least one portion which defines an upward direction. Regehr et al(4240814) further teaches wherein the series of undulating sheets comprises a first plurality of sheets having an undulating shape creating a series of alternating peaks and troughs, a second plurality of sheets having an undulating shape creating a series of alternating peaks and troughs, wherein the sheets of the first and second pluralities of sheets of the first plurality of air channel modules are alternately stacked, and wherein the troughs of the sheets in the first and second pluralities of sheets of the first plurality of air channel modules abut each other, thereby creating the air channels between the peaks of the first and second pluralities of sheets of the plurality of air channel modules. Regehr et al(4240814) further teaches a second plurality of air channel modules comprising a first plurality of sheets having an undulating shape creating a series of alternating peaks and troughs, a second plurality of sheets having an undulating shape creating a series of alternating peaks and troughs, wherein the sheets of the first and second pluralities of sheets of the second plurality of air channel modules are alternately stacked, and wherein the troughs of the sheets in the first and second pluralities of sheets of the second plurality of air channel modules abut each other, thereby creating the air channels between the peaks of the first and second pluralities of sheets of the plurality of air channel modules".

***Allowable Subject Matter***

Claims 6,9,10,11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 6 and 9 recite " wherein the last sheet of the first plurality of air channel modules is nested in the primary sheet of the second plurality of air channel modules". Regehr et al(4240814) taken together with Regehr et al(4072478) teaches a first and second plurality of air channel modules, each plurality of air channel modules having a planar sheet positioned between two of the air channel modules, however Regehr et al(4240814) taken together with Regehr et al(4072478) does not teach or suggest wherein the last sheet of the first plurality of air channel modules is nested in the primary sheet of the second plurality of air channel modules. Claims 10 and 11 depend on claim 6 and hence would also be allowable upon incorporation of claims 6,5,4 into claim 1.

Claims 14-18,21,23-30 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Claim 14 recites "wherein a last sheet of the first plurality of air channel modules is nested in a primary sheet of the second plurality of air channel modules such that substantially no gap is created between the last sheet and the primary sheet". Regehr et al(4240814) taken together with Regehr et al(4072478) teaches a first and second plurality of air channel modules, each plurality of air channel modules having a planar

sheet positioned between two of the air channel modules, however Regehr et al(4240814) taken together with Regehr et al(4072478) does not teach or suggest wherein a last sheet of the first plurality of air channel modules is nested in a primary sheet of the second plurality of air channel modules such that substantially no gap is created between the last sheet and the primary sheet. Claims 15-18,21 depend on claim 14 and hence are also allowed.

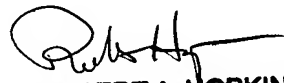
Claims 23 and 29 recite “nesting the primary sheet in the last sheet such that substantially no gap is created between the primary sheet and the last sheet, thereby forming an apparatus”. Regehr et al(4240814) taken together with Regehr et al(4072478) teaches a first and second plurality of air channel modules, each plurality of air channel modules having a planar sheet positioned between two of the air channel modules, however Regehr et al(4240814) taken together with Regehr et al(4072478) does not teach or suggest a step of nesting the primary sheet in the last sheet such that substantially no gap is created between the primary sheet and the last sheet, thereby forming an apparatus. Claims 24-28 depend on claim 23 and hence are also allowed. Claim 30 depends on claim 29 and hence is also allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert A. Hopkins whose telephone number is 571-272-1159. The examiner can normally be reached on Monday-Friday, 7am-4pm, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Rah  
May 23, 2005

  
ROBERT A. HOPKINS  
PRIMARY EXAMINER  
A.u. 1724